IN THE CLAIMS

Page 16, line 1, change "Patent Claims" to --What is claimed is:--.

Claims 1-30 (cancelled).

31. (New) An arrangement for recording and reproducing images of an object to be examined comprising:

an illumination system;

an image-generating recording system;

a controlling and evaluating computer;

said illumination system containing, in an illumination beam path, means for selecting at least one reference wavelength region and at least one information wavelength region from the beam of an individual illumination source in order to illuminate an object to be examined simultaneously by at least one reference wavelength region and at least one information wavelength region;

said image-generating recording system comprising an image-recording camera;

said reference wavelength region and information wavelength region each being adapted, respectively, to a color channel of the camera so as to be received by the color channel;

said at least one reference wavelength region being at least approximately invariant with respect to medically relevant information from the object to be examined, and

said at least one information wavelength region being provided for detecting the medically relevant information.

32. (New) The arrangement according to claim 31, wherein said means for simultaneous illumination of the object to be examined having a wavelength-selective optical filter device which is arranged in the illumination beam path for filtering the totality of

illumination light that is radiated for illuminating the object to be examined and which is constructed as a bandpass filter whose layer construction selects at least two narrow transmission regions serving as a reference wavelength region and an information wavelength region.

33. (New) The arrangement according to claim 32, wherein the layer filter is arranged in a parallel beam portion of the illumination beam path.

34. (New) The arrangement according to claim 31, wherein said means for simultaneous illumination of the object to be examined having a wavelength-selective optical filter device which comprises sector-shaped filter areas and is arranged in the aperture plane or in a plane of the illumination beam path conjugate to the aperture plane for filtering the totality of illumination light that is radiated for the illumination of the object to be examined.

35. (New) The arrangement according to claim 34, wherein the optical filter device comprises adjacent groups of filter areas and each group contains the filter areas for the wavelength regions to be selected.

36. (New) The arrangement according to claim 31, wherein the illumination system contains a continuously emitting illumination source and/or a strobe illumination source.

37. (New) The arrangement according to claim 31, wherein the means for simultaneous illumination of the object to be examined having at least two variously selecting optical bandpass filters whose selected wavelength regions form the reference wavelength region and information wavelength region, and wherein the bandpass filters are arranged in separate partial beam paths on the illumination side which proceed from a common illumination source and which are united to form a common beam path on the illumination side.

38. (New) The arrangement according to claim 37, wherein at least one of the

bandpass filters is constructed as a spectrally tunable bandpass filter whose control is connected to the controlling computer.

39. (New) The arrangement according to claim 31, wherein the means for simultaneous illumination of the object to be examined have at least two illumination sources which emit in different wavelength regions and whose illumination light is combined in a common illumination beam path that is directed to the object to be examined in order to ensure identical geometric illumination characteristics.

40. (New) The arrangement according to claim 31, wherein the means for matching the intensity of the reference wavelength region and information wavelength region to the color channels are provided for optimal control of the image-generating recording system.

41. (New) The arrangement according to claim 40, wherein the means for intensity matching are designed for variable intensities and have control units which are connected to the control computer so that the intensity matching between the wavelength regions can be carried out during operation.

42. (New) The arrangement according to claim 31, wherein a multiple-chip color camera is provided as image-generating recording system.

43. (New) The arrangement according to claim 31, wherein a single-chip color camera is provided as image-generating recording system.

44. (New) The arrangement according to claim 31, wherein at least one device for stimulation or provocation of the object to be examined is provided for carrying out functional imaging.

45. (New) The arrangement according to claim 44, wherein a controllable optical light manipulator communicating with the controlling and evaluating computer is arranged in the illumination beam path for programmable modification of the intensity curve and/or time

curve of a primary light coming from an illumination source, in that the modification has a temporally defined relationship with the adjustments of the illumination source and of the image recording and image evaluation, and in that a secondary light which is generated from the primary light by the modification is provided for illumination and for selective stimulation or provocation of the object to be examined.

46. (New) A method for detecting spatial and/or temporal medically relevant differences in anatomical structures of the eye as the object to be examined by means of an arrangement according to claim 31, comprising the steps of:

recording images of the anatomical structures simultaneously in the color channels of an image-recording camera which are associated with the reference wavelength region and information wavelength region provided on the illumination side from the illumination beam of an individual illumination source; and

generating secondary image values from the images for at least one noise-reduced secondary image by combining the image values of image points that are conjugate to one another in the color channels, and said secondary image values being associated with the anatomical structures in the image in a positionally correct manner.

47. (New) The method according to claim 46, wherein an evaluation window is formed at least for one color channel, which evaluation window is moved over the image and comprises at least two adjacent image points whose gray values are combined by summing or averaging to form a window value before generating the secondary image values, and wherein the secondary image values are generated from window values of the color channels that are conjugate to one another with respect to their window center points or from pixels of the color channels.

48. (New) The method according to claim 47, wherein the evaluation window is moved over the image by sliding and with window center points that are conjugate to one

another.

49. (New) The method according to claim 47, wherein the evaluation window is moved over the image so as to be offset by more than one pixel in each instance, and a secondary image with reduced image points is accordingly generated.

50. (New) The method according to claim 47, wherein the evaluation windows for the color channels have different window sizes, and the secondary image values are generated from window values whose window center points are conjugate to one another.

51. (New) The method according to claim 47, wherein the linking of the image values of the evaluation windows that are conjugate to one another or pixels is carried out by division.

52. (New) The method according to claim 47, wherein a secondary image sequence is generated from successively generated secondary images of identical image sections and is stored at least temporarily until the evaluation is concluded, wherein the secondary image sequence is generated with video standard in continuous illumination light but also as a strobe sequence in one or more sessions over longer intervals of time.

53. (New) The method according to claim 52, wherein the secondary images belonging to an image sequence are spatially oriented to one another based on the offset and/or rolling and/or distortion of the original images.

54. (New) The method according to claim 52, wherein characteristic values describing the functions of metabolism, vision or microcirculation or temporal or spatial changes between the secondary values of a secondary image sequence are determined from the secondary image sequences.

55. (New) The method according to claim 53, wherein characteristic values describing the functions of metabolism, vision or microcirculation or temporal or spatial changes between the secondary values of a secondary image sequence are determined from

the secondary image sequences.

56. (New) The method according to claim 55, wherein the characteristic values are associated with the anatomical structures in the original image in order to form functional images.

57. (New) The method according to claim 52, wherein provoked or stimulated changes in metabolism, vision or microcirculation are recorded with the secondary image sequences.

58. (New) The method according to claim 52, wherein the reference wavelength region and information wavelength region are changed during the generation of secondary image sequences by manually changing the wavelength-selective optical filter device or by controlling the spectrally tunable bandpass filters.

59. (New) The method according to claim 52, wherein the matching of the intensities of the reference wavelength region and information wavelength region is carried out manually or through the control computer during the generation of secondary image sequences in that feedback signals which control and optimize the matching of intensities are formed from the gray values of the color channels or from the secondary image values.

60. (New) An image-generating method for detecting spatial and/or temporal medically relevant differences in anatomical structures and functional characteristics of an object to be examined which is illuminated to form images and is optionally stimulated or provoked, comprising the steps of:

simultaneously illuminating the object to be examined by at least two wavelength regions which are generated from the illumination beam of an individual illumination source and which are adapted each to one color channel of a color camera serving to record images, wherein one of the wavelength regions is at least approximately invariant with respect to medically relevant information and another wavelength region is provided for detecting the

medically relevant information; and

generating at least one secondary image from at least two images of the anatomical structures in that secondary image values which are associated in a positionally correct manner with the anatomical structures in one of the images being generated from image values of image points that are conjugate to one another in the color channels.

61. (New) The image-generating method according to claim 60, wherein an evaluation window which is moved over the image is formed for each color channel, which evaluation window comprises at least two adjacent image points whose gray values are combined by summing or averaging to form a window value, and wherein the secondary image values are generated from window values of the color channels, which window values are conjugate to one another.